

1 1. A method of controlling a data head for reading data  
 2 from a data track on a magnetic tape in a magnetic tape drive,  
 3 comprising:  
 4 determining signal quality for read data signals  
 5 produced by a data head reading data from a data track; and  
 6 adjusting the position of the data head relative to the  
 7 data track using the signal quality.

1 2. The method of claim 1, wherein adjusting comprises:  
 2 performing a seek operation that includes changing the  
 3 position of the data head and determining changes in the  
 4 signal quality corresponding to the changes in data head  
 5 position until a predetermined level of improvement in the  
 6 signal quality is achieved.

1 3. The method of claim 1, wherein changing the position of  
 2 the data head comprises:  
 3 stepping of the data head laterally across the data  
 4 track.

1 4. The method of claim 3, wherein performing the seek  
 2 operation further comprises:  
 3 using the determined changes to determine direction and  
 4 size of steps of the stepping.

1 5. The method of claim 4, wherein performing the seek  
 2 operation further comprises:  
 3 comparing each of the determined changes to a lower  
 4 threshold; and  
 5 comparing a current number of steps taken by the seek



2           generating the signal quality values for data read from  
3 a data track.

1 12.       The method of claim 1, wherein the signal quality  
2 comprises error values.

1 13.       The method of claim 12, wherein the error values are  
2 indicative of errors between observed values and ideal values for  
3 the read data.

1 14.       An apparatus for controlling a data head to read data  
2 from a data track on a magnetic tape in a magnetic tape drive,  
3 comprising:

4           a stored computer program in memory instituting the  
5 steps of:  
6           determining signal quality for read data signals  
7 produced by a data head reading data from a data track; and  
8           adjusting the position of the data head relative to the  
9 data track using the signal quality.

1 15.       A tape drive system comprising:  
2           a data head structure to produce read data signals from  
3 data recorded on a data track of a tape;  
4           a head stepper coupled to the data head structure;  
5           a data channel unit to produce read data signal quality  
6 values from the read data signals; and  
7           a servo controller coupled to the head stepper and the  
8 data channel unit, the servo control being configured to use  
9 the signal quality values to control adjustment of the  
10 position of the data head structure relative to the data track  
11 by the head stepper.